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# AGREEMENT

## CONCERNING THE ADOPTION OF UNIFORM TECHNICAL PRESCRIPTIONS FOR WHEELED VEHICLES, EQUIPMENT AND PARTS WHICH CAN BE FITTED AND/OR BE USED ON WHEELED VEHICLES AND THE CONDITIONS FOR RECIPROCAL RECOGNITION OF APPROVALS GRANTED ON THE BASIS OF THESE PRESCRIPTIONS */

(Revision 2, including the amendments entered into force on 16 October 1995)

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*Addendum 3: Regulation No. 4*

***Revision 1***

**Incorporating:**
**Supplement 1 to the original version - Date of entry into force: 6 May 1974**
**Supplement 2 to the original version - Date of entry into force: 28 February 1989**
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## UNIFORM PROVISIONS FOR THE APPROVAL OF DEVICES FOR THE ILLUMINATION OF REAR REGISTRATION PLATES OF MOTOR VEHICLES (EXCEPT MOTOR CYCLES) AND THEIR TRAILERS

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**UNITED NATIONS**

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*/ Former title of the Agreement:

Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

GE.97-21448

Regulation No. 4

UNIFORM PROVISIONS FOR THE APPROVAL OF DEVICES FOR THE ILLUMINATION OF REAR REGISTRATION PLATES OF MOTOR VEHICLES (EXCEPT MOTOR CYCLES) AND THEIR TRAILERS

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1. DEFINITIONS

For the purpose of this Regulation:

1.1. "Rear registration plate lamp" means the device for the illumination of rear registration plates, hereinafter called "illuminating device", which illuminates the rear registration plate by reflection. For the approval of this device, the illumination of the space to be occupied by the plate is determined.

1.2. The definitions given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation.

2. APPLICATION FOR APPROVAL

The application for approval shall be submitted by the holder of the trade name or mark or by his duly accredited representative. It shall specify whether the device is intended to illuminate a wide plate (520 x 120 mm), tall plate (340 x 240 mm), plate for agricultural or forestry tractors (240 x 165 mm), or any combination of those plates. It shall be accompanied by the following, in respect of each type:

(a) drawings (three copies) in sufficient detail to permit identification of the type and showing geometrically the position in which the illuminating device is to be fitted in relation to the space to be occupied by the registration plate, and the outlines of the area adequately illuminated. The drawings must show the position intended for the approval number in relation to the circle of the approval mark;

(b) a brief technical specification stating the type and power of the lamp or lamps recommended by the manufacturer. This is not valid for lamps with non-replaceable light sources. 1/

(c) two samples, equipped with the lamp or lamps recommended.

3. MARKINGS

Illuminating devices submitted for approval must bear:

(a) the trade name or mark of the maker or manufacturer of the illuminating device;

(b) a space of sufficient size for the approval mark; this space shall be shown in the drawings mentioned in paragraph 2(a) above.

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1/ A light source is defined in ISO 7227:1987 "Road vehicles - Lighting and light-signalling devices - Vocabulary" as an Emitter of visible and radiant energy.

(c) in the case of lamps with non-replaceable light sources the marking of rated voltage and rated wattage.

4. APPROVAL

4.1. If the two samples of a type of illuminating device submitted in accordance with paragraph 2 above satisfy the provisions of this Regulation, approval shall be granted.

4.2. An approval number shall be assigned to each type approved. Its first two digits (at present 00 for the Regulation in its original form) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign this number to another type of device covered by this Regulation, except in the case of an extension of the approval to a device differing only in the colour of the light emitted.

4.3. Notice of approval or of extension or refusal of approval of a type of illuminating device pursuant to this Regulation shall be communicated to the Parties to the 1958 Agreement applying this Regulation, by means of a form conforming to the model in annex 2 to this Regulation.

4.4. Every illuminating device conforming to a type approved under this Regulation shall, in addition to the markings referred to in paragraphs 3(a) and 3(c) above, bear an international approval mark in conformity with annex 1, consisting of:

4.4.1. A circle surrounding the letter "E" followed by a number identifying the country which has granted approval; 2/

4.4.2. An approval number, in the vicinity of the circle;

4.4.3. The following additional symbol: the letter "L":

4.4.4. The first two digits of the approval number which indicate the most recent series of amendments to this Regulation may be placed in the vicinity of the additional symbol L.

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2/ 1 for Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for the Czech Republic, 9 for Spain, 10 for Yugoslavia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 14 for Switzerland, 15 (vacant), 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland, 21 for Portugal, 22 for the Russian Federation, 23 for Greece, 24 (vacant), 25 for Croatia, 26 for Slovenia, 27 for Slovakia, 28 for Belarus, 29 for Estonia, 30-36 (vacant) and 37 for Turkey. Subsequent numbers shall be assigned to other countries in the chronological order in which they ratify or accede to the Agreement concerning the Recognition of Approval for Motor Vehicle Equipment and Parts, and the numbers thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement.

4.5. The mark and symbols referred to in paragraphs 4.4.1., 4.4.2. and 4.4.3. shall be indelible and shall be clearly legible even when the illuminating device is mounted on the vehicle.

4.6. When two or more lamps are part of the same unit of grouped, combined or reciprocally incorporated lamps, approval is granted only if each of these lamps satisfies the requirements of this Regulation or of another Regulation. Lamps not satisfying any one of those Regulations shall not be part of such a unit of grouped, combined or reciprocally incorporated lamps.

4.6.1. Where grouped, combined or reciprocally incorporated lamps comply with the requirements of several Regulations, a single international approval mark may be applied, consisting of a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval, an approval number and, if necessary, the required arrow. This approval mark may be placed anywhere on the grouped, combined or reciprocally incorporated lamps provided that:

4.6.1.1. It is visible after their installation;

4.6.1.2. No part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.

4.6.2. The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval, shall be marked:

4.6.2.1. Either on the appropriate light-emitting surface;

4.6.2.2. Or in a group, in such a way that each lamp of the grouped, combined or reciprocally incorporated lamps may be clearly identified (see three possible examples in annex 1).

4.6.3. The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks by a Regulation under which approval has been granted.

4.6.4. An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.

4.7. Annex 1 gives examples of arrangements of approval marks for a single lamp (figure 1) and for grouped, combined or reciprocally incorporated lamps (figure 2) with all the additional symbols referred to above.

5. GENERAL SPECIFICATIONS

5.1. Each sample shall conform to the lighting specifications set forth in paragraph 9 below. 3/

Illuminating devices must be so designed that the entire surface to be illuminated is visible from the rear within the field of vision indicated in the drawing of annex 4.

5.2. All measurements shall be carried out by adjusting the lamp or lamps of the illuminating device to the minimum light flux prescribed for the test voltage in the specification of the lamp or lamps for the device.

5.2.1. All measurements on lamps equipped with non-replaceable light sources (filament lamps and other) shall be made at 6.75 V, 13.5 V or 28.0 V respectively.

In the case of light sources supplied by a special power supply, the above test voltages shall be applied to the input terminals of that power supply. The test laboratory may require from the manufacturer the special power needed to supply the light sources.

6. COLOUR OF LIGHT

The light of the lamp used in the illuminating device must be sufficiently colourless not to cause any appreciable change in the colour of the registration plate.

7. ANGLE OF INCIDENCE

The manufacturer of the illuminating device shall specify the position in which the device is to be fitted in relation to the space for the registration plate; the device must be so placed that the angle of incidence of the light on the surface of the plate does not exceed 82° at any point on the surface to be illuminated, this angle being measured from the extremity of the device's illuminating area which is furthest from the surface of the plate. If there is more than one illuminating device, the foregoing requirement shall apply only to that part of the plate intended to be illuminated by the device concerned.

The device must be so designed that no light is emitted directly towards the rear, with the exception of red light if the device is combined or grouped with a rear lamp.

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3/ These specifications are such as to ensure good visibility if the inclination of the registration plate does not exceed 30° on either side of the vertical.

8. MEASURING PROCEDURE

Luminance measurements shall be made on a piece of clean white blotting paper with a minimum diffuse reflection factor of 70 per cent, of the same dimensions as the registration plate, placed in the position normally occupied by it and 2 mm in front of its holder.

Luminance measurements shall be made perpendicularly to the surface of the paper, at the points shown in annex 3 according to the type of plate for which the device is intended, each point representing a circular area 25 mm in diameter.

9. PHOTOMETRIC CHARACTERISTICS

At each of the points of measurement shown in annex 3, the luminance B shall be at least equal to 2.5 $cd/m^2$.

The gradient of the luminance between the values $B_1$ and $B_2$, measured at any two points 1 and 2 selected from among those mentioned above, shall not exceed 2 x Bo/cm, Bo being the minimum luminance measured at the various points, that is to say:

$$\frac{B_2 - B_1}{distance\ 1\text{-}2\ in\ cm} \leq 2 \times Bo/cm$$

10. CONFORMITY IN MANUFACTURE

All illuminating devices bearing an approval mark provided for in this Regulation shall conform to the type approved.

The luminance B of any device picked at random from a mass produced batch shall not be lower than 2 $cd/m^2$ and, in the formula for the gradient, the factor 2 may be replaced by 3.

11. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

11.1. The approval granted in respect of an illuminating device pursuant to this Regulation may be withdrawn if the requirements laid down above are not complied with.

11.2. If a Party to the Agreement which applies this Regulation withdraws an approval it has previously granted, it shall forthwith notify the other Contracting Parties applying this Regulation thereof by means of a communication form conforming to the model in annex 2 to this Regulation.

12. PRODUCTION DEFINITELY DISCONTINUED

If the holder of the approval completely ceases to manufacture an illuminating device under this Regulation, he shall inform thereof the authority which granted the approval. Upon receiving the relevant communication that authority shall inform the other Parties to the Agreement which apply this Regulation thereof by means of a communication form conforming to the model in annex 2 to this Regulation.

13. NAMES AND ADDRESSES OF TECHNICAL SERVICES CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS

The Parties to the Agreement which apply this Regulation shall communicate to the Secretariat of the United Nations the names and addresses of the technical services conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or refusal or withdrawal of approval, issued in other countries, are to be sent.

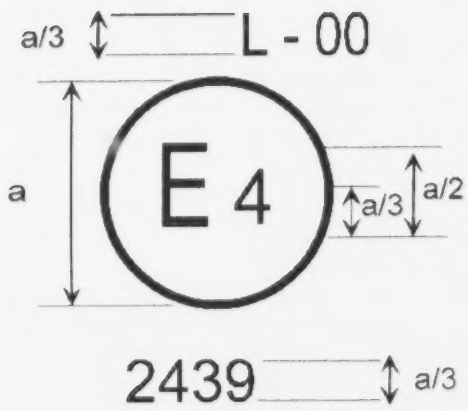
Annex 1

ARRANGEMENT OF APPROVAL MARKS

Figure 1

(Marking for single lamps)

Model A




a = 5 mm min

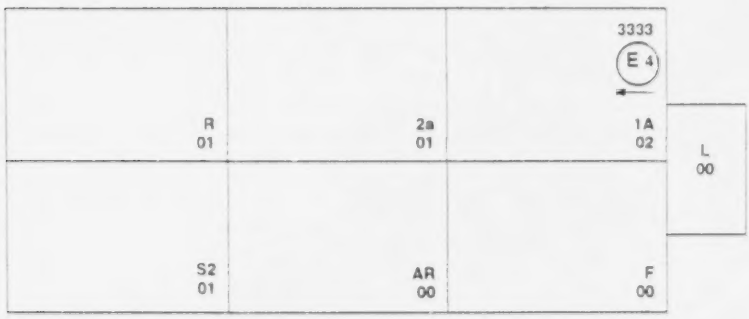
The device bearing the approval mark shown above is a device for the illumination of a vehicle's rear registration plate (L) approved in the Netherlands (E 4) pursuant to Regulation No. 4 under approval number 2439. The approval number indicates that the approval was granted in accordance with the requirements of Regulation No. 4 in its original form or as amended by the respective supplements to the Regulation in its original form, as the case may be.

Figure 2

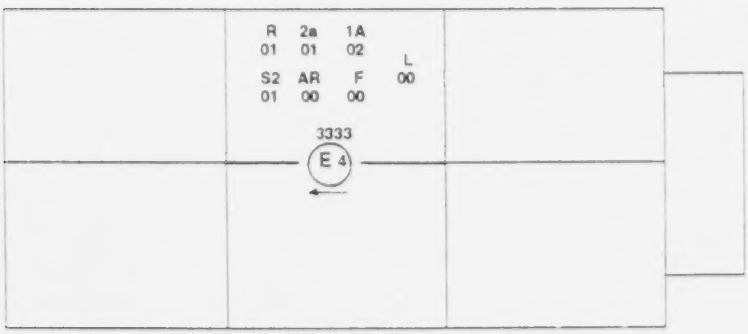
Simplified marking for grouped, combined or reciprocally incorporated lamps

(The vertical and horizontal lines schematize the shape of the light-signalling device. These are not part of the approval mark).

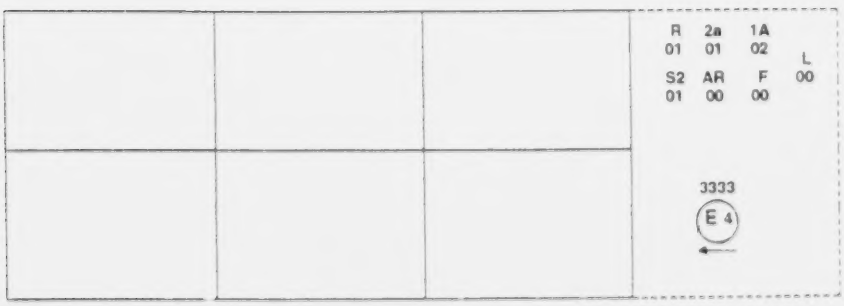
Model B




Model C




Model D



Note: The three examples of approval marks, models B, C and D represent three possible variants of the marking of a lighting device when two or more lamps are part of the same unit of grouped, combined or reciprocally incorporated lamps. This approval mark shows that the device was approved in the Netherlands (E 4) under approval number 3333 and comprising:

A retro reflector of class IA approved in accordance with the 02 series of amendments to Regulation No. 3;

A rear direction indicator of category 2a approved in accordance with the 01 series of amendments to Regulation No. 6;

A red rear position lamp (R) approved in accordance with the 01 series of amendments to Regulation 7;

A rear fog lamp (F) approved in accordance with Regulation No. 38 in its original form;

A reversing lamp (AR) approved in accordance with Regulation No. 23 in its original form;

A stop lamp with two levels of illumination (S2) approved in accordance with the 01 series of amendments to Regulation No. 7;

A rear registration plate illuminating device (L) approved in accordance with Regulation No. 4 in its original form.

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Annex 2

COMMUNICATION

(maximum format: A4 (210 x 297 mm))

issued by: Name of administration:
.....
.....
.....

concerning: 2/ APPROVAL GRANTED
APPROVAL EXTENDED
APPROVAL REFUSED
APPROVAL WITHDRAWN
PRODUCTION DEFINITELY DISCONTINUED

of a type of device for the illumination of rear registration plates of motor vehicles (except motor cycles) and their trailers pursuant to Regulation No. 4.

Approval No. .... Extension No. ....

1. Trade name or mark of the device: . . . . . .

2. Manufacturer's name for the type of device: . . . . . .

3. Manufacturer's name and address: . . . . . .

4. If applicable, name and address of manufacturer's representative:
. . . . . .

5. Submitted for approval on: . . . . . .

6. Technical service responsible for conducting approval tests: . . . . . .
. . . . . .

7. Date of report issued by that service: . . . . . .

8. Number of report issued by that service: . . . . . .

9. Concise description 3/: . . . . . .

Device for illuminating: a tall plate;
a wide plate;
a plate for agricultural or forestry tractors 2/

10. Position of the approval mark: . . . . . .

11. Reason(s) for extension (if applicable): . . . . . .

12. Approval granted/extended/refused/withdrawn: 2/

13. Place: . . . . . .

14. Date: . . . . . .

15. Signature: . . . . . .

16. The list of documents deposited with the Administrative Service which has granted approval is annexed to this communication and may be obtained on request.

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1/ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

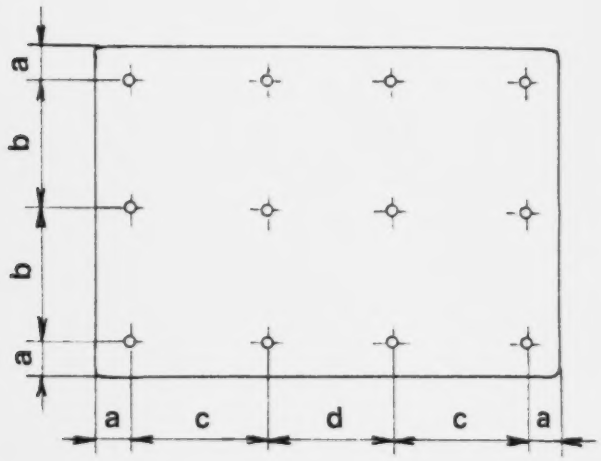
2/ Strike out what does not apply.

3/ For lamps with non-replaceable light sources indicate the number and the total wattage of the light sources.

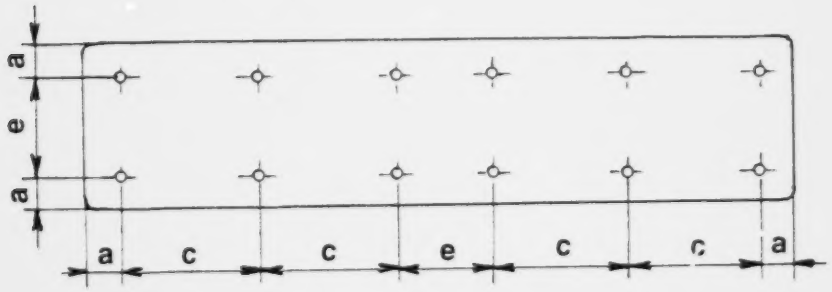
Annex 3

MEASUREMENT POINTS FOR TEST PURPOSES

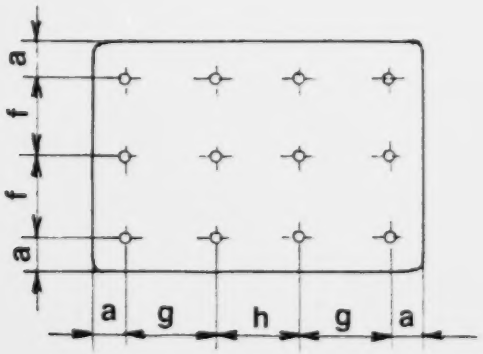
(a) devices for illuminating a tall plate (340 x 240 mm)




(b) devices for illuminating a wide plate (520 x 120 mm)




(c) devices for illuminating a plate for agricultural or forestry tractors (240 x 165 mm)

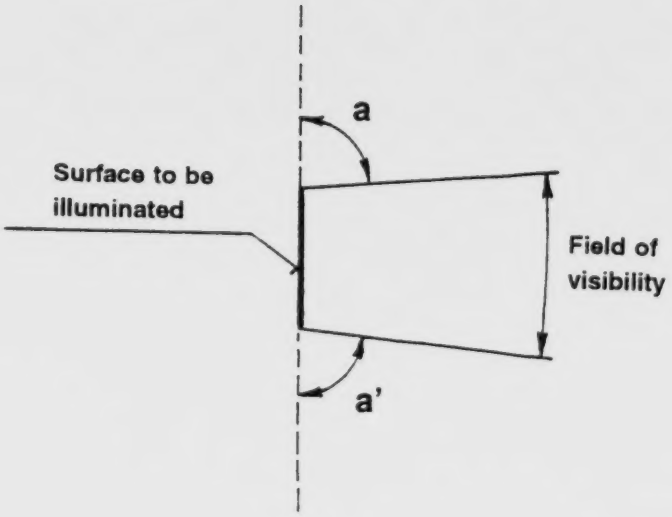


| | | | |
|---|---|---|---|
| a = 25 mm | b = 95 mm | c = 100 mm | d = 90 mm |
| e = 70 mm | f = 57.5 mm | g = 65 mm | h = 60 mm |

Note: In the case of devices for illuminating two or all of the plates, the measurement points used are obtained by combining the corresponding drawings above in accordance with the outline indicated by the make or manufacturer; however, if two measurement points are less than 30 mm apart, only one shall be used.

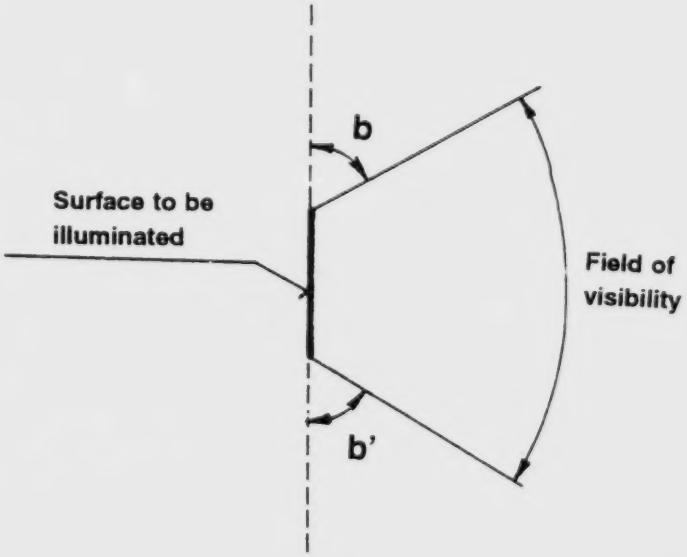
Annex 4

MINIMUM FIELD OF VISIBILITY OF THE SURFACE TO BE ILLUMINATED




Vertical section

a and a' should ≤ 85°




Horizontal section

b and b' should be ≤ 60°

1. The field-of-visibility angles shown above relate only to the relative positions of the illuminating device and the space for the registration plate.

2. The field of visibility of the registration plate when mounted on the vehicle remains subject to the relevant national regulations.

3. The angles shown take account of the partial occultation caused by the illuminating device. They must be adhered to in the directions in which there is most occultation. The illuminating devices must be such as to reduce the areas partly occulted to the minimum strictly necessary.

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Annex 5

PHOTOMETRIC MEASUREMENT OF LAMPS EQUIPPED WITH SEVERAL LIGHT SOURCES

1. The photometric performance shall be checked:

1.1. For non-replaceable light sources (filament lamps and other):

with the light sources present in the lamp, in accordance with paragraph 5.2.1. of this Regulation.

1.2. For replaceable filament lamps:

when equipped with mass production filament lamps at 6.75 V, 13.5 V or 28.0 V, the luminous intensity values produced shall lie between the maximum limit given in this Regulation and the minimum limit of this Regulation increased according to the permissible deviation of the luminous flux permitted for the type of filament lamp chosen, as stated in Regulation No. 37 for production filament lamps; alternatively a standard filament lamp may be used in turn, in each of the individual positions, operated at its reference flux, the individual measurements in each position being added together.